

REMARKS

The Office Action dated November 09, 2004, has been reviewed and the Examiner's comments carefully considered. Prior to this paper, claims 1, 3-9, 11-13, 15-28, and 30-45 were pending. By this paper, Applicant does not add or cancel any claims. Therefore, claims 1, 3-9, 11-13, 15-28, and 30-45 remain pending.

Applicant respectfully submits that the present application is in condition for allowance for the reasons that follow.

Claim Rejections Under 35 U.S.C. §103(a)

In the Office Action, claims 1, 3-6, 8-9, 11-13, 15-19, 21-26, 33-34, 38-40 and 42-45 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Fantone (U.S. Patent Number 4,786,154). Claim 7 is rejected under the same statute in view of the combination of Fantone with Shioda (U.S. Patent No. 6,081,371). Claim 20 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Fantone in view of Grund (U.S. Patent No. 6,217,519). Claims 27, 28, 30-32, 35-37 and 41 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Fantone in view of Martino (U.S. Patent No. 5,307,202).

Applicant relies on MPEP § 2143, which states that:

[t]o establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

It is respectfully submitted that at least the first and third criteria of MPEP § 2143 cannot be met vis-à-vis the amended claims in view of the rejections proffered in the Office Action.

The Cited References Do Not Suggest All Claim Recitations

Even if the first requirement of MPEP § 2143 was satisfied in the Office Action (which it is not, as explained below), the cited references still do not meet the third requirement, which is that

“the prior art reference (or references when combined) must teach or suggest all the claim limitations.”

Claim 1: Claim 1 recites that the controller is configured to adjust brightness of a plurality of regions of the image signal generated by the superimposition apparatus in response to measurements by the image measurement unit of the brightness of corresponding regions of the specimen image, wherein the controller decreases the brightness of the plurality of regions when the brightness of the corresponding regions is measured to be dull. (Emphasis added.) By way of an exemplary embodiment according to claim 1, if the corresponding regions of the specimen upon which the plurality of regions of the image signal will be superimposed are dull, the controller will dim, not brighten, the corresponding regions of the image superimposed on the specimen.

The Office Action correctly acknowledges that “Fantone et al. does not explicitly state wherein the controller decreases brightness of the plurality of regions when the brightness of the corresponding regions is measured to be dull.” (Office Action, page 3, lines 11-13.) Instead, the Office Action asserts that Fantone discloses than an “image signal can be processed by various known methods to provide enhancement of various features of interest on the object” (citing column 3, lines 6-15), and that, therefore, it would have been obvious to modify Fantone to arrive at the present invention. (Office Action, page 3, lines 17-19.)

Fantone does not contain such a disclosure. Fantone, at most, only states, at column 3, lines 14-15, that “[a]ny type of conventional image enhancement techniques can be employed.” (Emphasis added.) Webster’s Dictionary defines *conventional* as “lacking originality or individuality,” and “of traditional design.” Thus, for claim 1 to be obvious in view of Fantone, among other things, a showing by the PTO must be made that in the prior art, a conventional image enhancement technique includes a technique where a controller decreases the brightness of the plurality of regions when the brightness of the corresponding regions is measured to be dull. No showing that such an arrangement existed in the prior art and is conventional has been made.

It appears that the Office Action maybe relying on common knowledge in the art, as is discussed and permitted in MPEP § 2144.03, to satisfy the third and first requirements of MPEP § 2143. However, Applicant notes that § 2144.03 allows an applicant “to traverse such an assertion,” and that when an applicant does so, “the examiner should cite a reference in support of his or her position.” (MPEP § 2144.03, second paragraph.) Applicant hereby traverses the assertion that it would have been common knowledge in the art that a conventional image enhancement technique would include decreasing the brightness of an image as recited in claim 1. Applicant thus requests, relying on § 2144.03 that the PTO cite a reference and exactly identify where such a reference

teaches the alleged conventionality of decreasing brightness as claimed in claim 1, or else allow the claim.

Claim 33: Claim 33 recites a controller that adjusts brightnesses to maintain substantially constant ratios of each of the brightnesses of the plurality of regions of the image signal to each of the brightnesses of the corresponding regions of the specimen image. In an exemplary embodiment according to claim 33, if the brightness of (i) a region of the image signal is increased by a factor of two vis-à-vis the brightness of (ii) the respective specimen region, the brightness of the other regions of the image signal will likewise be increased by a factor of two vis-à-vis the brightness of the corresponding regions of the specimen. That is, if the specimen is broken up into regions A, B, C, D and E, and the overlay is broken up into corresponding regions AA, BB, CC, DD and EE, the ratios of the brightness of AA to A, BB to B, CC to C, DD to D and EE to E, would be 2 to 1.

The Office Action asserts that Fantone teaches such a feature “in so far as once the gain is changed a specific amount substantially constant ratios will be maintained.” (Office Action, page 5, lines 1-2.) This is not the case. Applicant respectfully notes that Webster’s dictionary defines the word constant as “invariable” and “uniform.” Such a definition is concomitant with the exemplary embodiment just described, were the ratios are uniform (i.e., the brightnesses are all increased by a factor of 2.) Conversely, in Fantone, once the gain of whatever parameter is changed (brightness, frequency, etc.) is changed a specific amount, the ratio of the increase in that parameter with respect to one region is not uniform with the ratio of the increase in brightness of another region, if there even is a change in brightness. That is, for example, in the case of brightness, a ratio of AA to A, for brightness, might be 2 to 1, while the ratio of BB to B, for brightness, is 1.5 to 1, while the ratio of CC to C, for brightness, is 3 to 1. This is most imminently the case with respect to Fantone teachings with respect to edge enhancement, where only the image of the edge is enhanced), and with respect to Fantone’s teaching of increasing the gain of only some frequencies to more clearly see diseased tissue. With regard to this latter teaching, for example, if only regions A and B have tissue exhibiting a certain fluorescent frequency, only regions AA and BB would show an increase in a parameter related to that frequency. Thus, the ratio of that parameter (e.g., brightness) for AA to A and BB to B would be different than those for CC to C, etc. The teachings of Fantone, therefore, result in varying ratios of brightness, since some regions may not have that particular frequency. Fantone does not teach or suggest each and every element of claim 33.

Claims 22, 27, 34 and 35: Claims 22 and 27 are allowable for the analogous reasons that make claim 1 allowable. Claims 34 and 35 are allowable for the analogous reasons that make claim 33 allowable.

Dependent Claims: Applicant respectfully submits that Shioda, Grund or Martino, individually or collectively, do not remedy the deficiencies of the independent claims. Therefore, the claims that depend from the independent claims are allowable.

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In sum, even if the first requirement of MPEP § 2143 may be satisfied by the proffered references, the third requirement of MPEP § 2143 cannot be satisfied, since the cited references do not teach each and every element of the present invention. Thus, the present claims are allowable.

Lack of Suggestion or Motivation to Modify or Combine the References

MPEP § 2144.05(III), entitled Rebuttal Of *Prima Facie* Case Of Obviousness, states that a “*prima facie* case of obviousness may also be rebutted by showing that the art, in any material respect, teaches away from the claimed invention.” (MPEP § 2144.05(III), second paragraph, emphasis added, citations omitted.)

Fantone teaches away from the present invention. As is repeatedly stated in Fantone and in the Office Action, Fantone teaches image enhancement. (Fantone’s title is “Enhanced-Image Operating Microscope.”) Webster’s dictionary defines the word enhance as “to add or contribute to, improve, increase, intensify.” Such a definition is consistent with every specific teaching associated with varying an image parameter of Fantone (e.g., col. 3, lines 18-20: “increasing the gain of a portion of specified frequency . . . can be employed, for example, to enhance a weak fluorescence of the object;” col. 3, lines 33-35: “To produce the enhanced image, one then increases the gain applied to the pixels,” col. 3, lines 54-55: “Edge enhancement thus may also be performed by increasing the high-frequency gain.” Fantone never teaches or suggests decreasing an image parameter. In Fantone, if a region of the specimen is dull, the device of Fantone would increase the brightness of the superimposed image by a value to make the dull image “bright enough.” Fantone teaches a device that operates in an opposite manner as the invention of claim 1. Fantone teaches away from the present invention.

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MPEP § 2143.01 states that “the prior art *must* suggest the desirability of the invention.” (MPEP § 2143.01, subsection 1, emphasis added.) The Office Action asserts that it would have been obvious to “make any adjustment including” those according to claim 1 “to provide any desired enhancement of various features of interest on the object.” (Office Action, sentence spanning pages 3-4, emphasis added.) Assuming that this is correct, no evidence or rationale has been put forward that the adjustment regime of claim 1 would have been desirable. Merely stating that an applicant’s

invention is desirable is not sufficient motivation to modify a reference to achieve an applicant's invention. Such rationale is circular and relies on impermissible hindsight. Indeed, under such a rationale, it would be obvious to modify any reference to achieve any alleged desired result. Such a standard would eviscerate the first requirement of MPEP § 2143. A *prima facie* case of obvious has thus not been met for yet another reason.

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MPEP § 2143.01, subsection 6 states that “the proposed modification cannot change the principle of operation of a reference – If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810 (CCPA 1959).” In *Ratti*, the CCPA held that the “suggested combination of references would require a substantial reconstruction and redesign of the elements shown in the primary reference.” This substantial redesign would have resulted in changing a rigid seal to a resilient seal. Thus, a reference cannot be modified to render an invention obvious if the modification changes a principle of operation of the reference.

With the above in mind, it is respectfully submitted that since the teachings of Fantone rely on increasing a parameter of an image, modifying Fantone to decrease the brightness of a region of an overlaid image in response to a determination that a respective region of the underlying image is dull would change the principle of operation of Fantone. Since modifying Fantone to decrease the brightness of an overlaid image changes the principle of operation of Fantone, just as changing the rigid seal to a resilient seal was found to change the principle of operation in *Ratti*, “the teachings of [Fantone] are not sufficient to render the claims *prima facie* obvious.” (MPEP § 2143.01, emphasis added.) Claim 1 is not obvious.

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Fantone also teaches away from the invention of claim 33. In regard to claim 33, as noted above, in Fantone, if a region of the specimen is dull, the device of Fantone would increase the brightness of the superimposed image by a value to make the dull image “bright enough.” However, if a region of Fantone is not dull or less dull, the brightness of any superimposed image would not be increased by the same factor, *if even increased at all*, since the goal of Fantone is to simply ensure that a user can see/identify otherwise hidden portions of a specimen. Fantone does not concern himself with portions of the specimen that may clearly be seen. Thus, Fantone teaches away from device that maintains substantially constant ratios of each of the brightnesses of the plurality of regions of the image signal to each of the brightnesses of the corresponding regions of the specimen image, as is required in claim 33.

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In summary, because of the lack of suggestion or motivation in the prior art to modify Fantone, the first requirement of MPEP § 2143 has not been met with respect to claims 1 and 33, as well as with respect to the other independent and dependent claims, for at least the pertinent reasons detailed above, and hence, a *prima facie* case of obviousness has not been established.

Conclusion

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Examiner Fineman is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

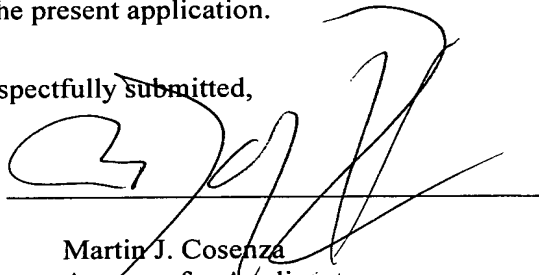
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Respectfully submitted,

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